



Comments for: The Technical Study Panel on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining

Dear Panel Members:

I would like to present the following information for your review and consideration on your evaluation of “Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining.”

The direction of the ventilation current and the fire fighting capabilities must be considered in your report. The risks involved with each particular case are different and higher risk systems should require increased protections for the miners. The ventilation flow can be either towards the mining section, away from the mining section or split in some manner. I have personally witnessed or have been involved with each of these scenarios over the years. Each has key areas for consideration in regards to early warning, escape and fire fighting capabilities. I hope you will give each of these considerations within your report.

Flow towards the mining section:

Traditional fire fighting and fire warning devices are installed from outby to inby as the section develops. With the flow of air in this direction, alarm situations are more recognizable; traditional fire fighting capabilities are utilized; and the fresh air is at the firefighters back. CO alarm stations are usually sequentially numbered on installation and it is easy to recognize rising CO levels at sequential stations thus prompting a quick response. Firefighters can work their way into a fire with the smoke and flame going away from them. This is the most common method and is well recognized by the average miner, especially in an emergency situation. An air change is not required to fight a fire on the belt entry. This system has the lowest risk for miners in regards to early warning, escape and firefighting. It should be considered as the base system that all other systems are evaluated against.

Flow away from the mining section

Ventilation flows in the belt entry away from the longwall or section faces have become more prevalent due to the abilities to apply rockdust during working production shifts. This ventilation system presents potential conflicts with the traditional fire warning and fire fighting systems. Fire warning devices are usually numbered in sequential order, which is in reverse of the actual airflow direction in this case. This may prompt an untrained or replacement worker to not react as swiftly as the normal miner employed to respond to alerts and alarms. This may lead to a reduction in time to alert inby miners when alarms do occur. Where flow is away from the face, I'd recommend that additional training be conducted for all individuals who may be responsible for

responding to a fire alarm and for fire fighting personnel. This can be quarterly to ensure that a prompt response is achieved. Additional training should be mandated anytime this system is utilized.

With this type of ventilation, fire fighting can be a challenge due to the flow of fire contaminants into the faces of those responsible for responding. Traditional fire fighting systems are inadequate and must be addressed in your report for this type of ventilation. A recent fire in a large mine resulted in an unplanned air change on the section while a significant number of people were in the mine trying to evacuate as well as fight the fire. The smoke contaminants were going down the beltline outby and the fire fighting pipelines, valves and hoses were all located in the contaminants. Management made the immediate decision to make an unplanned air change so that fire fighting could proceed. This air change was made without requesting any approvals or having a plan to do so. Should this type of airflow be utilized, the traditional fire fighting systems should not be utilized without additional protections. An additional or supplemental system should be required and installed in fresh air where fire fighting can be initiated immediately. The fire fighting capabilities must come from the fresh air side of any fire. There are many possibilities here including a supplemental system installed in the adjacent fresh air entry. I am hoping that you will address this situation and recommend additional fire warning and fire fighting systems where belt air ventilation is in the outby direction. This system provides a much higher risk when utilized with traditional fire alarm and fire fighting systems. A fire cannot be attacked when going against the airflow. The ability to quickly fight a fire in this situation requires more or different sensing and fire fighting systems as well as additional training.

Split Air Flow, both towards and away from the mining section

This ventilation system is not used often and presents unusual situations where a quick response to a fire alarm may be compromised by the complexity of the system or a general lack of knowledge may be present for those who respond to the alarms. These systems are used where in-panel moves or other unusual situations occur. I would recommend additional training of all involved with emergency response and fire fighting where these hybrid systems are used. Additionally, I recommend that the portion of belt entry where the air flow direction is outby requires additional fire sensing and fire fighting systems as mentioned above. These systems must be installed so that a fire can be fought from the fresh air side.

Should you have any questions in regards to my comments, please feel free to contact me at 724-430-4942. Thank you.

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